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#11 M.H. 7-25-03

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant:	Shirley et al.	Examiner:	Rodriguez, P.
Serial No.:	10/010,412	Group Art Unit:	2125
Filed:	December 7, 2001	Docket No.:	AMDA.499C1
Title:	MASK IDENTIFICATION DATABASE SERVER		

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited, **in triplicate**, in the United States Postal Service, as first class mail, in an envelope addressed to: Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on July 14, 2003.

By: Erin M. Nichols
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APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
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Sir:

This is an Appeal Brief submitted pursuant to 37 C.F.R. § 1.192 for the above-referenced patent application. Please charge Deposit Account 01-0365 (TT4002C1) in the amount of $320 for this brief in support of appeal as indicated in 37 C.F.R. § 1.17(c). If necessary, authority is given to charge/credit Deposit Account 01-0365 (TT4002C1) any additional fees/overages in support of this filing.

I. Real Party in Interest

The real party in interest is Advanced Micro Devices, Inc. (AMD), of Sunnyvale, CA. The above-referenced patent application is assigned to AMD.

II. Related Appeals and Interferences

There are no related appeals or interferences.

III. Status of Claims

Claims 1-6 and 8-15 are presented for appeal. Claims 1-6 and 9-14 stand rejected under 35 U.S.C. § 102(e) as being anticipated by *Wiesler et al.* (U.S. Publication No. US2001/0047222) and claims 8 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Wiesler et al.* in view of *Terao* (U.S. Patent No. 5,191,535). The pending claims presented for appeal, as presently amended, may be found in the attached Appendix of Appealed Claims.

IV. Status of Amendments

The application was originally filed on December 7, 2001, including 14 claims. In reply to a first Office Action mailed on May 31, 2002, an Office Action Response was filed on September 3, 2002, including, *inter alia*, the cancellation of claim 7 and amendments to claims 6, 8-10 and 13. In reply to a second Office Action mailed on October 9, 2002, an Office Action Response was filed on January 9, 2003. In reply to a final Office Action mailed on February 19, 2003, an Office Action Response was filed on April 17, 2003. An Advisory Action was mailed on May 12, 2003 and a Notice of Appeal was filed via facsimile on May 14, 2003.

V. Summary of the Invention

The present invention is directed to a method for tracking and monitoring masks in a computer controlled wafer processing facility. By tracking masks and creating a historical database of each mask's information, *e.g.*, mask identification code, pod identification code, facility location identification code, and tool identification code, each mask's movement through the processing facility can be mapped. Once the mask undergoes a degradation analysis this map can be used to determine the cause of any damage or wear on the mask.

One embodiment of the present invention is directed to a computer-based automated method and system for tracking the movement of masks used in a wafer processing facility where the masks are moved in mask pods. Mask data is generated for each mask including a mask identification code. A computer is used to process the mask data including cross-referencing respective mask identification codes to pod identification codes and updating the mask data to include a facility location identification code.

Another embodiment of the present invention is directed to a computer-based automated method for tracking the movement of masks used in a wafer processing facility where the masks

are moved in mask pods as described above. The method further includes conducting a degradation analysis on each mask including a comparison of the mask data to a mask baseline specification so as to generate degradation data for each mask. Also, the mask degradation is analyzed and tracked to determine the useful life of each mask.

VI. Issues for Review

Issue 1: Should the claim rejections be maintained when the cited '222 publication does not satisfy the Section 102(e) requirements of prior art?

Issue 2: Should the Section 102(e) rejection of claims 1-6 and 9-14 be maintained when the cited '222 publication fails to provide correspondence to every claim limitation?

Issue 3: Should the Section 103 rejection of claims 8 and 15 be maintained when the record is devoid of motivation for modifying the '222 publication with the '535 reference?

VII. Grouping of Claims

The claims as now presented do not stand and fall together and are separately patentable for the reasons discussed in the Argument. For purposes of this appeal, the claims should be grouped as follows: Group I - claims 1, 4, 5, 9, 11 and 12; Group II – claims 2, 3 and 13; Group III – claim 6; Group IV – claim 10; Group V – claim 14; and Group VI – claim 8; and Group VII – claim 15.

VIII. Argument

Before addressing the rationale for the claim groupings relative to the prior art, the term "prior art" needs context with respect to the instant application. The present application is a continuation application which claims priority to application serial number 09/665,646, now U.S. Patent Number 6,351,684, which was originally filed on September 19, 2000. Thus, the priority date of the present application is September 19, 2000. For a reference to be presumptive Section 102(e) prior art with respect to the instant application, the reference must pre-date Appellant's priority filing date of September 19, 2000. As discussed below in Issue 1, the

Examiner's primary reference (the '222 publication) fails to pre-date the instant application's priority date. Notwithstanding this argument, Appellant has grouped the claims as discussed below.

Appellant submits that the claims of groups I – VII are patentably distinguishable from each other and from the cited prior art references. The claims in group I are patentable over the prior art, because they are directed to subject matter that includes a method for tracking the movement of masks being moved in mask pods including updating the mask data to include a facility location identification code, which is not taught or suggested by any of the references cited. The claims of group II are separately patentable over the other claim groups because they are directed to subject matter that includes a tool identification code, which is not necessarily present in the other claim groups and not taught by the cited prior art. The claim of group III is separately patentable over the other claim groups because it is directed to subject matter that includes storing mask data including mask structural defects, which is not necessarily present in the other claim groups and not taught by the cited prior art. The claim of group IV is separately patentable over the other claim groups because it is directed to subject matter that includes tracking mask movement from a material stocker through a stepper and through an inspection tool while in a mask pod, which is not necessarily present in the other claim groups and not taught by the cited prior art. The claim of group V is separately patentable over the other claim groups because it is directed to subject matter that includes conducting a degradation analysis on each mask, which is not necessarily present in the other claim groups and not taught by the cited prior art. The claim of group VI is separately patentable over the other claim groups because it is directed to subject matter that includes storing match data of a reticle serial number and a wafer lot to a processing event, which is not necessarily present in the other claim groups and not taught by the cited prior art. The claim of group VII is separately patentable over the other claim groups because it is directed to subject matter that includes tracking an event associated with a select wafer lot including matching a mask identification code with the select wafer lot, which is not necessarily present in the other claim groups and not taught by the cited prior art.

Issue 1: The claim rejections cannot be maintained when the cited '222 publication does not satisfy the Section 102(e) requirements of prior art.

Each of the Section 102 and Section 103 rejections erroneously relies upon the '222 publication as being prior art. The '222 publication is a non-provisional application that was filed on April 25, 2001, more than seven months after the instant application's effective filing date of September 19, 2000. In an attempt to assert the '222 publication as prior art, the Examiner erroneously relies upon the '222 publication's claim of priority to a provisional filing date of April 25, 2000. However, the Examiner refused to support the rejection, as required by the statutes and rules by providing this provisional patent document as requested by Appellant. *See*, Office Action Response dated January 9, 2003 at page 2. The patent statutes and rules mandate that the Examiner provide any such provisional patent document relied upon and/or used to support the rejections. *See*, 35 U.S.C. § 132 and 37 C.F.R. § 1.104. Because the Examiner did not comply with such fundamental rules, the rejections must be set aside and Appellant should be given the opportunity to assess the merits of the document and determine whether to distinguish and/or swear behind.

Appellant requested evidence that the written description of the provisional application adequately corresponds to the teachings of the non-provisional '222 application. Recent case law holds that the specification of the provisional application must contain a written description of the invention in such full, clear, concise, and exact terms, to enable an ordinarily skilled artisan to practice the invention claimed in the non-provisional application. *See*, New Railhead Mfg., L.L.C. v. Vermeer Mfg. Co., 298 F.3d 1290 (Fed. Cir. 2002). Thus, one cannot simply assume that the embodiment described in an underlying provisional application necessarily corresponds to the non-provisional application, even though the patent office may have alleged such a priority date correspondence.

In view of the above and the Examiner's obligation to provide all relevant documents supporting the rejection, Appellant requested a copy of the provisional patent document in the Office Action Response filed on January 9, 2003. The Examiner responded by issuing a Final Office Action and by stating, "the examiner has reviewed the contents of the provisional application 60/199,453 and has concluded that '222 is fully supported by the disclosure of the material presented in the provisional document and this rejection is maintained." This conclusion by the Examiner fails to satisfy any standard of evidence and Appellant cannot be expected to rely upon the Examiner's conclusion without any showing of how the conclusion

was reached. Without such evidence, Appellant cannot ascertain the appropriateness of the rejections or adequately respond to the Office Action.

The Examiner's cite in the Office Action to 37 C.F.R. §1.14(c)(1)(i) is an improper attempt to sidestep the above discussed requirements. Rule 1.14(c)(1)(i) is merely a permissive rule which indicates how Appellant may obtain a copy of the provisional document. This permissive rule is rarely used in response to an Office Action because this permissive rule would not ensure that an applicant would have sufficient time to obtain and assess the merits of a provisional document in due time for responding to the Office Action. As discussed above, the patent statutes and rules mandate that the Examiner provide any such provisional patent document relied upon and/or used to support the rejection(s). *See*, 35 U.S.C. § 132 and 37 C.F.R. § 1.104. At page 6 of the Office Action, the Examiner acknowledges that he has relied upon the provisional filing date of the '222 publication. Moreover, the Examiner's after final invitation to request the provisional patent document via §1.14(c)(1)(i) foreclosed Appellant's ability to timely respond to the rejections and is a clear violation of the above-noted patent statutes and rules.

Without a copy of the provisional application being provided to Appellant, the Examiner cannot rely on a filing date per such a patent document that was never provided to Appellant. Appellant contends that any claim of priority to the provisional filing date is inappropriate. Thus, the only effective date of the '222 publication is April 25, 2001, which is after the Appellant's effective filing date (September 19, 2000, the filing date for application serial number 09/665,646, now U.S. Patent Number 6,351,684); therefore, each of the rejections is improper and should be reversed.

Issue 2: The Section 102(e) rejection of claims 1-6 and 9-14 should be reversed because the cited '222 publication fails to provide correspondence to every claim limitation.

The Section 102(e) rejection is improper because the Office Action fails to show complete correspondence between the '222 publication and the claimed invention and fails to present the rejection in a clear and understandable manner.

The Office Action fails to show that the '222 publication completely corresponds to the claimed invention. The claimed invention is directed to using certain identification codes including, for example, facility identification codes, tool identification codes, mask identification codes, pod identification codes and carrier identification codes. The Office Action fails to show where the '222

publication teaches any of these claimed codes. For example, the Office Action cites Figure 3B of the '222 publication as teaching Appellant's claimed facility identification code, but the '222 publication does not ever refer to a facility identification code. The Office Action also repeatedly cites paragraph 15 as teaching first, a processing facility, second, adding a tool identification code during an update when the mask arrives at a new tool location, and third, mask data being generated when a mask arrives at a new tool location and the data is stored in a computer means. Paragraph 15 contains no discussion of updating, arriving at a tool location, a tool identification code, data generation or computer means.

Further, the citations presented in connection with the Section 102 rejection are conflicting and therefore illogical. For example, the "Current location" as shown in the table of Figure 3B refers to a reticle location, and these reticles are located in carriers. Thus, the '222 publication refers to "Current location" as the location of the reticle in the carrier. *See also*, "Cumulative time" of Figure 3B which is noted as being carrier independent, and implying that the other reticle attributes in Figure 3B are associated with the carrier (perhaps as confirmed by the underlying provisional document). The "location" citations by the Examiner are also conflicting with respect to the Examiner's own assertions of prior art correspondence to the claimed invention. Again using the "Current location" example, the Examiner alleges at pages 2-3 of the Office Action that "Current location" refers to Appellant's claimed "facility location identification codes" (page 2), and to Appellant's claimed "tool identification codes" (pages 2-3), and also to Appellant's claimed historical database (page 3, lines 2-4). This one aspect of the '222 publication cannot correspond to each of these different limitations of the instant invention.

Without a showing of complete correspondence between the cited references and the present invention, the Section 102(e) rejection cannot stand. The Examiner failed to show where the '222 publication teaches each of the claim limitations. Accordingly, Appellant requests that the rejection be reversed.

Issue 3: The Section 103 rejection of claims 8 and 15 should be reversed because the record is devoid of motivation for modifying the '222 publication with the '535 reference.

In view of the discussion above in Issue 1 as well as the arguments presented below, the Section 103 rejection of claims 8 and 15 cannot stand because there is no motivation to modify the '222 publication in the manner asserted.

Appellant submits that the Office Action fails to present evidence of motivation in support of the modification of the cited '222 publication. Evidence has not been provided of any teaching or suggestion for using the '222 publication in connection with matching reticle data and wafer lot data with processing line data and storing the match data, or for modifying the reference to achieve the claimed limitations. Recent case law indicates that evidence of motivation must be specifically identified and shown by some objective teaching in the prior art leading to the modification. "Our court has provided [that the] motivation to combine may be found explicitly or implicitly: 1) in the ***prior art references*** themselves; 2) in the knowledge of those of ordinary skill in the art that certain ***references***, or disclosures in those references, are of special interest or importance in the field; or 3) from the nature of the problem to be solved, 'leading inventors to look to ***references*** relating to possible solutions to that problem.'" Ruiz v. A.B. Chance Co., 234 F.3 654, 57 U.S.P.Q.2d 1161 (Fed. Cir. 2000).

The Office Action asserts that motivation for modifying the '222 publication is provided by the '535 reference's teachings that "identification of a 'to be processed lot' and mask prior to processing by a production unit reduces standing time of the production unit, therefore reducing overall production time" and "using a computer control system is also known and taught to provide faster processing of mask data, which was previously done manually." *See,* page 6 of the Office Action. The objectives of the '535 (secondary) reference are irrelevant to the propriety of the proposed combination; therefore, the Office Action's assertion of motivation is insufficient. For a Section 103 rejection to be proper, the proposed combination cannot undermine the purpose of the primary reference, in this case the '222 publication. The Office Action fails to identify any proper evidence of why one skilled in the art would be led to modify the '222 publication, and does not provide any evidence of factual teachings, suggestions or incentives from the prior art that lead to the proposed modification.

Moreover, the Examiner's proposed combination is vague and likely would undermine the purpose of the '222 publication. The '222 publication is directed to allowing a user to assess reticle data and manage the reticles accordingly. *See*, column 1, paragraph 4. The Examiner's proposed modification would provide for some type of computer matching of reticles and wafer lots in the '222 management system. The '222 publication is directed to a user assessing reticle data, Appellant fails to see how providing the computer matching of the '535 reference would support the purpose of the '222 publication. As such it would appear that at least the purpose of the '222 publication would be undermined. *See,* In re Gordon, 733 F.2d 900 (Fed. Cir. 1984) (a

§103 rejection cannot be maintained when the asserted modification undermines purpose of main reference).

No evidence of motivation for combining the asserted references has been presented because the proposed modification of the '222 publication is unsupported and would likely undermine the purpose of the '222 publication. Such an improper combination cannot support a *prima facie* Section 103 case of obviousness and the rejection should be reversed.

IX. Conclusion

In view of the above, Appellant submits that the rejections are improper, the claimed invention is patentable, and that the rejections of claims 1-6 and 8-15 should be reversed. Appellant respectfully requests reversal of the rejections as applied to the appealed claims and allowance of the entire application.

Authority to charge the Assignee's deposit account was provided on the first page of this brief.

Respectfully submitted,

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APPENDIX OF APPEALED CLAIMS

1. A computer-based automated method for tracking the movement of masks used in a wafer processing facility, the masks being moved in mask pods, the method comprising:

for each mask, generating mask data that includes a mask identification code; and

using a computer to process the mask data, including cross-referencing respective mask identification codes to pod identification codes, and updating the mask data to include a facility location identification code.

2. The method of claim 1, wherein said updating occurs as each mask moves to a subsequent location during wafer processing and said updating includes adding a tool identification code to the mask data set when the mask arrives to a tool location.

3. The method of claim 2, after said updating, further including: creating a historical database for the mask data corresponding to each mask and tracking the movement of each mask when the mask arrives to a new location.

4. The method of claim 1, after the updating step, further including the step of providing a material control system that sends a selected mask to a new location, thereby triggering an update of the mask data set for the selected mask when the mask arrives to the new location.

5. The method of claim 1, further including: storing mask data.

6. *(Amended)* The method of claim 5, wherein storing mask data includes: using the computer to track the condition of each mask, the mask condition including particle contamination, mask degradation, number of exposures, number of times mask is handled and mask structural defects /wherein the masks are selected from the group consisting of reticles, wafer processing masks and solder bump masks.

8. *(Amended)* The method of claim 6, wherein said storing mask data includes: using the computer to match a reticle serial number and a wafer lot to an event on a processing line and storing match data as part of the mask data set.

9. *(Amended)* The method of claim 1, further including matching the mask to a carrier, the carrier having a carrier identification code, and storing the carrier identification code data as part of the mask data.

10.*(Amended)* The method of claim 1, further including tracking the mask movement from a material stocker, through a stepper and through an inspection tool while in a mask pod.

11. A system for tracking the movement of masks used in a wafer processing facility, the masks being moved in mask pods, the system comprising:

for each mask, means for generating mask data that includes a mask identification code; and

computer means for processing the mask data, including cross-referencing respective mask identification codes to pod identification codes, and updating the mask data to include a facility location identification code.

12. The system of claim 11, further including a material handling system adapted to move the masks and mask pods to multiple locations in the wafer processing facility.

13.*(Amended)* The system of claim 10, wherein the mask data set further includes a tool identification code, generated when the mask arrives to a new tool location, that is stored in the computer means.

14. A computer-based automated method for tracking the movement of masks used in a wafer processing facility, the masks being moved in mask pods, the method comprising:

for each mask, generating mask data that includes a mask identification code;

using a computer to process the mask data, including cross-referencing respective mask identification codes to pod identification codes, and updating the mask data to include a facility location identification code;

conducting a degradation analysis on each mask that includes a comparison of the mask data to a mask baseline specification so as to generate degradation data for each mask; and

analyzing and tracking the mask degradation data to determine the useful life of each mask.

15. The method of claim 14, further including: tracking an event associated with a select wafer lot, the event tracking including matching the mask identification code with the select wafer lot.